

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method for producing a plated film, comprising the steps of:
carrying a resin film having a conductive surface into a plating solution accommodated in a plating bath provided with an anode,

passing the resin film through the plating solution,

carrying the resin film from the plating bath to run along a cathode roll which is arranged outside and in the downstream side of the plating bath,

wherein the conductive surface of the resin film is brought into electrical contact with the cathode roll through a liquid an electrolyte layer for electroplating a plating layer on the conductive surface of the film, and

wherein the following relation is satisfied:

$$E_0 > [(I/Cs) \times d]/\sigma$$

where E_0 is the reduction potential of a metal constituting the plating layer; I is the value of a current flowing through the cathode roll for plating; Cs is the area of the conductive surface of the resin film in electrical contact with the cathode roll through the electrolyte liquid layer; d is the thickness of a gap between the cathode roll and the conductive surface of the resin film; and σ is the conductivity of a liquid constituting the electrolyte liquid layer, and

further wherein the carrying tension T of the resin film is from 10 N/m to 320 N/m.

2. (Currently Amended) A method for producing a plated film, according to claim 1, wherein the conductivity σ of the liquid constituting the electrolyte liquid layer existing in the gap is controlled by means of the concentration of an electrolyte mainly composed of sulfuric acid.

3. (Currently Amended) A method for producing a plated film, according to claim 1, wherein the conductivity σ of the liquid constituting the electrolyte liquid layer existing in the gap is from 1 mS/cm to 100 mS/cm.

4. (Original) A method for producing a plated film, according to claim 1, wherein the thickness d of the gap is from 20 μm to 500 μm .
5. (Previously Presented) A method for producing a plated film, according to claim 4, wherein the thickness d of the gap is controlled by means of a carrying tension of the resin film.
6. (Cancelled)
7. (Original) A method for producing a plated film, according to claim 1, wherein the plating layer is composed of copper.
8. (Previously Presented) A method for producing a plated film, according to claim 1, wherein the resin film is made of a polyimide resin or polyester resin.
9. (Cancelled)
10. (Cancelled)
11. (Withdrawn) A cathode roll for plating used for producing a plated film by a method, in which a film carrying means for carrying a film having a conductive surface, a cathode roll, and a plating bath arranged in the upstream and/or downstream side of the cathode roll and accommodated with a plating solution and an anode are used in such a manner that while the film is carried by the film carrying means, the conductive surface of the film is brought into electrical contact with the cathode roll through a liquid layer, and passed through the plating bath for forming a plating layer on the conductive surface of the film, characterized in that the surface roughness R_{max} of the cathode roll is 1 μm or less.
12. (Withdrawn) A cathode roll for plating used for producing a plated film by a method, in which a film carrying means for carrying a film having a conductive surface, a cathode roll, and a plating bath arranged in the upstream and/or downstream side of the cathode roll and accommodated with a plating solution and an anode are used in such a manner that while the film is carried by the film carrying means, the conductive surface of the film is brought into electrical contact with the cathode roll through a liquid layer, and passed through the plating bath for forming a plating layer on the conductive surface of the film, characterized in that the Vickers hardness of the surface of the cathode roll is 200 or more.

13. (Withdrawn) A cathode roll for plating, according to claim 11 or 12, which has a surface layer mainly composed of tungsten.
14. (Withdrawn) A cathode roll for plating, according to claim 11 or 12, which has a surface layer containing 50 wt% or more of tungsten and further containing at least one element selected from the group consisting of chromium, nickel and carbon.
15. (Withdrawn) A cathode roll for plating, according to claim 11 or 12, which has a surface layer containing 60 to 80 wt% of tungsten, 15 to 25 wt% of chromium, 1 to 10 wt% of nickel, and 1 to 10 wt% of carbon.
16. (Withdrawn) A cathode roll for plating, according to claim 11 or 12, which is treated on the surface by a thermal spraying method.
17. (Withdrawn) A cathode roll for plating, according to claim 16, wherein the thermal spraying method is a detonation flame spraying method.
18. (Withdrawn) A cathode roll for plating, according to claim 16, wherein the porosity of a thermally sprayed layer formed by surface treatment based on the thermal spraying method is 2% or less.
19. (Withdrawn) A method for producing a plated film, in which a film carrying means for carrying a film having a conductive surface, a cathode roll, and a plating bath arranged in the upstream and/or downstream side of the cathode roll and accommodated with a plating solution and an anode are used, wherein the film is carried by the film carrying means, the conductive surface of the film is brought into electrical contact with the cathode roll through a liquid layer, and passed through the plating bath for forming a plating layer on the conductive surface of the film, characterized in that the cathode roll is a cathode roll for plating as set forth in claim 11 or 12.
20. (Withdrawn) A method for producing a circuit board by forming a circuit pattern on a plated film, characterized in that the plated film is a plated film produced by the method for producing a plated film as set forth in any one of claims 1 to 12.
21. (New) A method for producing a plated film according to claim 1, wherein the electrolyte layer is supplied by a separate electrolyte accommodating pan.